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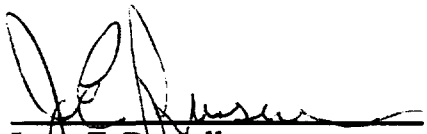
Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of

Guidelines for Evaluating the
Environmental Effects of
Radiofrequency Radiation

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ET Docket No. 93-62

REPLY COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION



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SUMMARY

- The Commission should use the 1992 ANSI Standard as the basis of any Rules which it may promulgate as a result of this proceeding.
- Radio Service Parts 90, 94, and 95, and appropriate portions of Parts 21, 22 (stations), 74, and 80, as well as portable radios used in these services, (except for Part 22) should be classified in the controlled environment. Parts 22 (subscriber equipment), and 99 should be placed in the uncontrolled environment.
- The term "categorical exclusion" should be applied to only those cases where routine environmental evaluation has been determined to be unnecessary. This is normally done on a Radio Service basis. The word "exclusion" should be applied to other situations, such as for the low-power and SAR provisions contained in the ANSI Standard.
- The Commission should take appropriate action to: extend the low-power exclusion frequency limitation upward in frequency to accommodate existing and potential new services; determine an appropriate power level such that the 2.5 cm spacing requirement need not be applied to the low-power exclusion; solicit ANSI/IEEE interpretation of the word "maintained" as applied to the low-power device exclusion; and permit alternative methods to be used to determine SAR.
- The Comments of the EPA are generally flawed, and should be rejected by the Commission. Also, the recommendation by the FDA to classify hand-held portable radios in the uncontrolled environment is without foundation, and should be rejected.

- The Land Mobile Industry as a whole must assume responsibility for adherence to Commission Rules relative to electromagnetic energy.
- Rules which result from this proceeding should phased-in over a reasonable time period; existing land mobile equipment should be grandfathered indefinitely.
- The Commission is requested to apply federal preemption to electromagnetic matters.

INTRODUCTION

The Mobile Communications Division of the Telecommunications Industry Association (hereafter called TIA) represents manufacturers and suppliers of telecommunications equipment used primarily in the cellular, private land mobile radio, cordless radio, and personal communications services. Moreover, TIA is an accredited national trade association which produces technical standards for these products and their related systems. Based upon the composition of its membership, TIA believes that it is uniquely qualified to comment upon the proposals put forth in this proceeding and the Comments filed by the various other respondents. In these Reply Comments, we will sometimes refer to the ANSI/IEEE C95.1-1992 standard as the ANSI standard.

THE COMMISSION SHOULD ADOPT THE 1992 ANSI STANDARD

Most of the Comments in this proceeding support the substitution of the ANSI/IEEE C95.1-1992 Standard for the ANSI C95.1-1982 Standard. The 1992 standard results from advances in knowledge gained over the past decade. Those who crafted ANSI/IEEE C95.1-1992 possess substantial expertise in the field of radiofrequency bioeffects. Moreover, as the most recent of all the candidate standards (NCRP, IRPA, etc.), ANSI/IEEE C95.1-1992 clearly provides the strongest foundation for Commission action in this Rulemaking.

Certain parties (e.g., the Linear Corporation) attack C95.1-1992 on the grounds of alleged vagueness in the standard itself or alleged lack of procedural due process in the ANSI mechanism. However, the standard itself is reasonably clear, logical, and comprehensive, and the IEEE and ANSI are standard-setting organizations of long standing and national repute. ANSI proceedings are open to all, and any who failed to participate cannot fairly blame ANSI for their dissatisfaction with C95.1-1992.¹ Moreover, they have every opportunity in this proceeding to make their opinion

¹ "Those who sleep on their rights cannot be heard to complain about the consequences of their own negligence." WCOV, Inc. v. FCC, 464 F.2d 812 (D.C. Cir. 1972).

known, and the Commission's rulemaking provides the full measure of notice and chance for comment that the Administrative Procedure Act, 5 U.S.C. § 553, requires.

Certain others (e.g., EPA and the ARRL Bioeffects Committee) claim that C95.1-1992 suffers from a failure to consider athermal responses to radiofrequency energy. EPA asserts that the likely safe levels of ambient radiofrequency energy will be substantially below those that C95.1-1992 permits. The ANSI record indicates that the experts considered the issue of athermal effects and found further protection unnecessary. Of course, TIA recognizes the possibility of future advances in knowledge of low-level radiofrequency effects on living tissue. However, hypothetical future refinements cannot justify either Commission inaction now or a gross overreaction that bans the use of equipment that exposes the public to low levels of radiofrequency energy.

Literally millions of people have used radiofrequency energy themselves or have been present in low-level fields during occupational pursuits, military service, and avocations such as amateur and CB radio communications, and remote-control hobbyist activities. TIA is unaware of any credible evidence of resulting health risks. As TIA understands it, the scientific literature supports the neutral effects of low-level radiofrequency fields.² In a reasonable exercise of its responsibility to act in the public interest, the FCC may properly adopt C95.1-1992 now.

THE COMMISSION SHOULD CLASSIFY THE LAND MOBILE SERVICES INTO THE CONTROLLED AND UNCONTROLLED ENVIRONMENTS ON THE BASIS OF IT RULE PARTS

The ANSI Standard contains two recommendations for human exposure to radiofrequency energy. One of these exposure levels applies to the "controlled environment" and the other to the "uncontrolled environment". Even though ANSI stated that the recommended exposure levels developed for the controlled

² See, e.g., Elder, Joe A., Ph.D. *Thermal Effects, Cumulative Effects, Cancer, and Lifespan Effects in Mammals Exposed to Radiofrequency Radiation*.

environment should be safe for all, it did propose a two-tiered standard which contains more stringent requirements for the uncontrolled environment. This additional tier was not based upon any scientific justification; rather it was adopted to provide an additional safety factor.

In TIA's Comments, it suggested that since there was no scientific-medical justification for a two-tiered exposure system, the Rules for implementation would be more readily understood and accepted if they followed the structure of existing FCC regulations. Specifically, the characteristics of users and specifics of their communications as reflected by Part 90 services and Part 22 service are sufficiently different to justify placing the former service in the controlled environment and the latter in the uncontrolled. TIA pointed out that the operational nature of the Part 90 radio services encompasses people who are, in many cases, "professional communicators", while Part 22 users might not even be aware of the fact that their phone actually transmits radiofrequency energy.

TIA also indicated in its Comments that because of relevant similarities with Part 90, licensees in Rule Parts 94, 95, and appropriate portions of parts 21, 22 (stations), 74, and 80 should also be included in the controlled environment. In addition, the new Part 99 service is expected to be similar to Part 22; thus subscriber equipment in these Parts should be included in the uncontrolled environment.

In summary, while there is no scientific evidence that either of these categories of services are unsafe from a radiofrequency energy perspective, assigning the controlled and uncontrolled categories as elaborated above would provide a practical implementation of the radiofrequency exposure standards. A review of other submissions in this proceeding indicates that a number of parties share views similar to those put forth by TIA.³

³ A partial list of respondents with views similar to TIA is as follows; Utilities Telecommunications Council; Electromagnetic Energy Policy Alliance; Ericsson Corporation; Jules Cohen & Associates; Association for Maximum Service Television, Inc. and National Broadcasting Company, Inc.; EIA Consumer Electronics Group; National Association of Broadcasters; and CBS, Inc., et al.

**THE COMMISSION SHOULD DIFFERENTIATE BETWEEN THE TERMS
"CATEGORICAL EXCLUSION" AND "EXCLUSION"**

TIA's review of the Comments related to the term "categorical exclusion" lead us to the observation that considerable confusion exists over consistent application of that term as used in the NPRM. In our Comments, the term categorical exclusion was applied on a Radio Service basis to the exemption from environmental evaluation, and related to station installations as well as to associated mobile and portable radio units. Other Commentors used the term categorical exclusion as applied to the exemption from SAR measurements for certain low power devices when used with power levels below the ANSI specified values with the radiating structure maintained more than 2.5 cm from the body.

TIA notes that in the NPRM, the term categorical exclusion was applied to either 1) radiated power or SAR as reflected at page 8, paragraph 16, or 2) the exemption from environmental evaluations as reflected at page 9, paragraphs 19-21. It is TIA's opinion that the broad generic term categorical exclusion cannot be indiscriminately applied to the two entirely different "exemption" issues without resultant confusion. Moreover, TIA opines that the seeds of the term categorical exclusion were cast by the NPRM which used the term categorical exclusion in terms of both environmental processing and measurement associated with low power devices.

TIA wishes to reinforce the points made in its Comments that the instant rulemaking should appropriately provide for "exemptions" for low power and SAR measurements, as well as exemptions for environmental evaluations. Moreover, the FCC should promulgate rules with minimum ambiguity. We therefore request that the FCC clarify the use of the generic term categorical exclusion. We recommend that the term "categorical exclusion" be applied, on a Radio Service basis, to those cases where environmental evaluation is unnecessary, and the term "exclusion" be applied to those situations as elaborated in the ANSI Standard which involve low power devices and SAR measurements.

CERTAIN ENHANCEMENTS TO THE ANSI STANDARD COULD SERVE ALL INTERESTED PARTIES

As elaborated in our Comments and in these Reply Comments, TIA believes that the ANSI Standard is the most appropriate choice for the Commission to use as the basis of its Rules regarding electromagnetic energy matters. Nevertheless, as articulated by TIA and other parties filing Comments in this proceeding, there are several enhancements which could be made to the Standard which would significantly improve its utility for all concerned. Specifically, the ANSI upper frequency limit of 1.5 GHz, which now applies to the low-power device exclusion, should be extended upward to include, at least, the spectrum which will be used for PCS. Also, the 2.5 cm spacing requirement, which also applies to this exclusion, should be further studied with a view toward specification of an appropriate lower power level such that this restriction is unnecessary. Finally, TIA recommends that alternative methods for determination of SAR be considered.

Extension of the Low-Power Exclusion Frequency Limitation

TIA in its Comments in this proceeding (at page 10) indicated strong support for the upward extension of the current ANSI low-power exclusion frequency limitation of 1.5 GHz to include the PCS spectrum; it also pointed out that Commission authorization to use even higher spectrum may result from the initiative to reallocate 200 MHz of Federal Government spectrum for private sector use.

It is noteworthy that a significant number of other respondents in this proceeding agree with TIA.⁴ There is substantial support to extend this frequency limitation to include, as a minimum, the new PCS frequency bands. Very simply, such an extension could serve well both the Commission and its licensees by negating

⁴ For example, see the Comments of: Ericsson Corporation; E. F. Johnson Company; Apple Computer, Inc.; Land Mobile Communications Council; Telocator; Northern Telecom; Bell South Corporation; PacTel Corporation; Sprint Cellular Company; and Motorola.

unnecessary administrative burden while still assuring that the requisite safety standards are fully met. As articulated in our Comments, there is no known scientific rationale which would suggest that such an extension is unwarranted. On the contrary, it is our understanding that the current frequency cut-off of 1.5 GHz resulted simply because there was no experimental data available at the time upon which to base a higher limit. It thus seems eminently reasonable for the Commission to take whatever steps it deems necessary to cause this frequency limit to be extended upward to include those frequency bands which will be used in the relatively near term. Of course, TIA continues to fully support the notion that all electromagnetic energy standards, including this requested frequency extension, must be based upon adequate scientific rationale.

Modification of the ANSI Standard to Eliminate the 2.5 cm Spacing Requirement

The above-discussed frequency extension by itself would not accommodate some situations, however, because the ANSI low-power exclusion is not applicable in those cases where devices are maintained at a spacing closer than 2.5 cm from the body. Thus, further enhancement of the ANSI Standard is needed such that a significant benefit occurs from an extension to the frequency limit.⁵ TIA in its Comments (at page 9), while agreeing with the rationale behind this limitation, urged the Commission to solicit further work by the relevant ANSI/IEEE committee to determine appropriate power limits such that this spacing limit would be unnecessary. These new power limits would, of course, be lower than the currently prescribed ANSI limits. It is entirely possible that the resultant uncontrolled environment power level determined from additional ANSI/IEEE deliberation would be adequate to fully accommodate PCS portable radios.

⁵ The requested enhancement relative to the 2.5 cm limitation will accommodate particular portable radio use and power situations. The existing ANSI specified powers which would continue to require this associated spacing will also accommodate certain situations, and should likewise be adopted by the Commission. Finally, we emphasize that the ANSI low-power exclusion which applies to devices which are used at a spacing of greater than 2.5 cm is not intended to be affected by the requested modification; it should be fully applicable in relevant situations.

Again, a significant number of Commentors in this proceeding concur with TIA on this matter.⁶ It is recognized by these parties, as well as by TIA, that the orderly implementation of services such as PCS can be materially facilitated by investing the necessary time and effort to take the ANSI Standard "one step further". Furthermore, TIA believes that this effort can be accomplished while still protecting the scientific integrity of the Standard.

Interpretation of the Word "Maintained" as Applied to the Low-Power Device Exclusion

The NPRM indicates that all portable hand-held radios that operate within 2.5 cm of the body must be tested for SAR. The Commission expressly stated that "under the ANSI/IEEE guidelines exclusions based on radiated power would not apply when the 'radiating structure' is within 2.5 cm of the body."⁷ TIA notes that the word "maintained" is not included in the above FCC statement; however, ANSI/IEEE does use this qualifying word in its language which states that this "exclusion does not apply to devices with the radiating structure maintained within 2.5 cm of the body."⁸ TIA believes that the definition of the word "maintained" could become an important factor as to whether portable hand-held devices can be excluded.

One TIA member company, Ericsson GE, wrote to the relevant IEEE Committee on October 15, 1993 requesting an interpretation of the word "maintained". As of this date, the IEEE SC4 Committee has not rendered its response. One view on this matter is that the Committee was concerned about body mount antennas where in normal use the entire radiating structure would be in close proximity to the relatively large expanse of the torso.

⁶ For example, see the Comments of: Ericsson Corporation; Electromagnetic Energy Policy Alliance; Matsushita Communication Industrial Corporation of America; Land Mobile Communications Council; Northern Telecom Inc.; and Motorola.

⁷ See NPRM at p. 8, para. 16.

⁸ See C95.1-1992 at Sections 4.2.2.1 and 4.4.2.1.

Clearly, it would be useful for the Commission to seek ANSI/IEEE interpretation of this matter, and to appropriately reflect resolution of this matter into its Rules.

Alternate Techniques for SAR Determination

In those cases where low-power exclusions are not applicable, it may be necessary to determine by some means the SAR of a given radio. Measurement techniques are currently known and have been used to determine SAR; however, they have not been applied widely.

The procedure of measuring SAR accurately can be challenging. It would be very useful if simpler, alternative techniques could be used as a substitute for actual measurement. Computer analysis using high-resolution numerical techniques may provide a workable solution for this matter. Specifically, Dr. O. P. Gandhi of the University of Utah has developed a Finite-Difference Time-Domain technique which involves computer analysis of a model of the human head and neck, a portable telephone, and related intervening space. The model is broken into 2.5 million pieces, each of which is approximately 2mm by 2mm by 2.5 mm. As the validity and maturity of this model evolves, it may prove to be an acceptable alternative to actual laboratory measurement of SAR.

TIA notes that several Commentors have urged the Commission to consider the use of alternate analytical techniques for the determination of SAR.⁹ We fully support this and any other soundly-based approach which can simplify the process for manufacturers, carriers, site and equipment owners, and licensees to assure adherence to the ANSI Standard.

⁹ See the Comments of: Ericsson Corporation; Electromagnetic Energy Policy Alliance; and Matsushita Communications Industrial Corporation of America.

TIA Stands Ready to Assist the Commission in Relevant Standards Setting Activities

Some ongoing standards activities are most appropriately accomplished by the relevant committee which generated the ANSI Standard. Certainly, the need to establish an appropriate power level which negates the 2.5 cm spacing requirement is one example of this. Other specific cases may exist, however, that might be undertaken more effectively by another standards setting body. This could be the case in those instances where the standard is product or product category specific.

TIA indicated on pages 11 and 29 in its Comments that a standard for determination of portable radio SAR is needed and that as an ANSI accredited organization, it would be pleased to act as the focal point in developing this standard. We wish to reiterate here our willingness to undertake this task. It is clearly in the interest of all concerned to facilitate in a timely manner such standards which are essential to the orderly implementation of appropriate Rules.

THE COMMENTS OF THE EPA ARE FLAWED

TIA has carefully studied the Comments of the United States Environmental Protection Agency (EPA) and believes that several of the positions that it has taken are inherently flawed. The technical issues raised by EPA related to scientific data in subgroups as well as the mechanisms of interaction for adverse effects, are unconvincing. In contrast, the technical portions of the ANSI/IEEE Standard were thoroughly studied by appropriate Committees and are credible in TIA's judgement. We concur with the view that:

Because the Commission is not an agency with biomedical research expertise in the area and should not therefore substitute its sole judgement for that of a recognized body of experts who have been working through peer review on such matters for years, ...the Commissions proposal to adopt the ANSI/IEEE

Standard, while essentially sound, should be modified in consideration of the very complex nature of the subject matter. ...Changes to the ANSI/IEEE Standards on all but administrative or procedural matters should be referred back to the appropriate C95.1 Committee for peer review and endorsement prior to codification into the FCC's rules. Such a course of action will enable the FCC, industry and other affected parties to work with a common body of technical information.¹⁰

Other matters discussed by the EPA include: 1) The Basis and Scope of Expertise in Developing the Standard; 2) Application of a Two-Tier Program and; 3) Exposure Criteria Protection.

In general, we do not agree with the EPA recommendation that the FCC should not adopt the 1992 ANSI/IEEE standard;¹¹ EPA has not established convincing arguments to support its position.

The Basis and Scope of Expertise in Developing the Standard

The EPA Comments advocate a clear bias toward the NCRP Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields" by inferring that the ANSI/IEEE standard is less "current" (excluding literature considerations for shock and burn) than the 1986 NCRP document. Moreover, EPA argues that the ANSI/IEEE document is "generally deficient"¹² with the further implication that the ANSI/IEEE group did not consider the more recent data that was available to NCRP. TIA reinforces the position expressed in its Comments that the ANSI/IEEE body is the

¹⁰ See Ericsson Corporation Comments at p.4.

¹¹ See EPA Comments at p.2, para.1.

¹² See EPA Comments at p.5.

most inclusive body convened in the world to address the matter of radiofrequency exposure.

The ANSI/IEEE body, which consists of some 125 members of various interests representing Academia/Research, Government, Industry, General Public, and Independent Consultants constitutes a level of expertise with an extensive scope, far exceeding the NCRP activities. It is this body of experts that should be used for providing the decisions as to what scientific data, protection levels, and exposure risk should be considered for establishing protection levels. Therefore, TIA recommends that the ANSI/IEEE C95.1-1992 document continue to be the basis for the FCC rulemaking on the radiofrequency exposure matter.

Application of a Two-Tier Program

The EPA argues against the ANSI/IEEE approach of a two-tier program of "controlled" and uncontrolled" as being "not well defined and ...discretionary."¹³ Additionally, EPA offers that the NCRP radiofrequency exposure limits which encompasses "workers" and the "public" is somehow better and therefore worthy of recommendation. TIA fails to see any merit that the two tiers of "workers" and "public" will offer any substantial improvement in the nature of discretionary determinations; at best only marginal improvement in definition might be achieved.

¹³ See EPA Letter pgs. 2-3, item 1b.

As offered in our Comments, the FCC has, and must accept responsibility for clarity in its Rulemaking. Two tiers are two-tiers, no matter if named "Controlled/Uncontrolled" or "Workers/Public". TIA remains of the opinion that ANSI/IEEE has offered the best designation; the FCC should act within this rulemaking to minimize ambiguity in its classifications.

Exposure Criteria Protection

The EPA asserts that the ANSI/IEEE 1992 standard allows a two-fold increase in MPE and concludes that the NCRP 1986 document should be adopted instead of ANSI/IEEE C95.1-1992 due in part to EPA's reasoning that "[t]heir [NCRP] exposure criteria are more protective at higher frequencies."¹⁴ This recommendation demonstrates an incomplete analysis and understanding of the exposure criteria as applied by EPA in comparison of the two documents.

Clearly the power density numbers specified in ANSI/IEEE C95.1-1992 are higher than those of the NCRP. Thus, on a superficial level when comparing numbers based only on power density, an argument showing that the NCRP numbers are lower can be advanced.¹⁵

¹⁴ See EPA Comments at p.8, Summary of Recommendations and p.2.

¹⁵ This was the comparison used by EPA.

However, the EPA reasoning is flawed because of its use of only power density values without considering the requisite time averaging as well as the constraints on Peak Power (pulse) associated with “exposure criteria”. Omission of the pulse limits within a time averaging consideration results in an inaccurate representation by the EPA in its Comments as demonstrated below.

A meaningful comparison of the relative merits of an “exposure criteria” must include simultaneous consideration of four factors:

1. Tier (Controlled/Uncontrolled or Worker/Public)
2. MPE at frequency of comparison
3. Averaging Time
4. Pulse magnitude permitted within Averaging Time

For example, at the most protective Tier (Uncontrolled/General Population) at 100 GHz (the highest frequency encompassed by the NCRP Report¹⁶), the MPE’s are expressed in Power Density values of 1 mW/cm² for NCRP and 10 mW/cm² for ANSI/IEEE.

EPA is erroneous in suggesting that, solely on the basis of Power Density comparisons, the NCRP “exposure criteria” is more protective.¹⁷

¹⁶ TIA observes that the FCC’s NPRM is in error at para. 24, p.11 when it incorrectly references NCRP’s frequency range to be “1.5 to 300 GHz”; and also at p. 21, Table of Average Time, where the entry of $616,000/f^2$ should be $616,000/f^{1.2}$.

¹⁷ The FCC requested comment at para. 24, p.11 in the NPRM on the “significance of the differences (1 mW v. 10 mW) between NCRP and ANSI/IEEE guidelines.” TIA, after study of the EPA comments and subsequent analysis of the differences, must comment that such differences are not significant except when considered in totality with simultaneous factors of 1) tier; 2) MPE; 3) Averaging Time; and, 4) Pulse magnitude limits.

Therefore, to make a meaningful comparison the remaining factors must be considered:

<u>Factors</u>	<u>NCRP Report</u>	<u>ANSI/IEEE¹⁸</u>
Averaging Time	30 Minutes	37 Seconds
Peak Power (pulse) limit	None	$\frac{\text{MPE} \times \text{Avg. Time (Sec.)}^{19}}{5 \times \text{Pulsewidth (Sec.)}}$

Comparisons can be made with the introduction of a pulse time duration of 100 milliseconds (0.1 sec.) which occurs each averaging time period. The case for the ANSI/IEEE's Peak MPE limit with averaging time of 37 seconds becomes $(10 \times 37) / (5 \times 0.1) = 740 \text{ mW/cm}^2$. Since the NCRP has no peak pulse power limit, and with its allowed averaging time of 30 minutes, the peak MPE that the pulse could develop (and still meet the average 1 mW/cm^2 power density for a averaging period) is $(1 \times ((30 \times 60) / 0.1)) = 18,000 \text{ mW/cm}^2$. Thus, the resultant power density permitted by NCRP is substantially higher than that permitted by ANSI/IEEE.

It becomes obvious by inspection of the following example summarizing table, that the EPA indication that NCRP is a more restrictive document has not appropriately considered all the factors that must be simultaneously evaluated for determination of the merits of the respective guidelines.

¹⁸ See C95.1-1992 Section 4.1.2. (g), p.16, MPE in Uncontrolled Environment.

¹⁹ Ibid. Also note that this formula is applied to pulsed radiofrequencies fields of pulse durations less than 100 minutes.

<u>FACTOR</u>	<u>NCRP</u>	<u>ANSI/IEEE</u>
TIER	GENERAL POPULATION	UNCONTROLLED
MPE POWER DENSITY (@ 100 GHZ)	1 MW/CM ²	10 MW/CM ²
AVERAGING TIME	30 MINUTES	37 SECONDS
PEAK POWER (PULSE) PERMITTED	NO LIMIT	(MPE * AVERAGE TIME (SEC))/ 5 * PULSEWIDTH (SEC)

Thus, TIA must conclude that EPA's argument against the adoption of the ANSI/IEEE C95.1 standard is in itself flawed and should as such be dismissed by the FCC.

CDRH PROPOSES EXCESSIVE REGULATIONS BY OPPOSING THE LOW POWER EXCLUSION

The Center for Devices and Radiological Health (CDRH) of the Food and Drug Administration submitted comments which generally supported approval of the FCC Proposed Rules with the exception of the exclusion clause for low power devices. Additionally, CDRH stated support for applying the "Uncontrolled" requirements to handheld portable devices.

TIA disagrees with these recommendations on the basis that introduction of such sweeping and all inclusive regulatory constraints are without foundation. There has been extensive use by tens of millions of users of FCC licensed land mobile equipment over many years without credible evidence that any harm whatsoever has been caused.

The TIA Comments established a clear recommendation for assignment of equipment including hand-held portables to "Controlled" and "Uncontrolled" according to FCC service category. TIA sees no reason to change that recommendation and reinforces its view by reference here.

Low power devices (hand-held, portable, two-way, cellular phones, and other communications devices) can be appropriately excluded from environmental evaluation based on some 20 years of experimental measurements on portable devices. To advance that these devices which do not exceed SARs in the user, can somehow induce "relatively high SARs in portions of the body of nearby persons"²⁰ (emphasis added) is simply incomprehensible. We steadfastly maintain that on the basis of measurements and use of portables over the past 20 years, there is no valid reason to withhold the allowance for these devices from the "low power exclusion" in this Rulemaking.

COMPLIANCE WITH THE ANSI STANDARD IS THE RESPONSIBILITY OF INDUSTRY AS A WHOLE; THE BURDEN SHOULD NOT BE THRUST SOLELY UPON MANUFACTURERS

TIA stated in its Comments that it is in a position to develop standardized testing procedures for measuring electromagnetic energy effects. This will materially facilitate the land mobile community in complying with Commission Rules regarding electromagnetic energy. After reviewing the numerous Comments²¹ filed in this proceeding, however, and as the trade association representing manufacturers, TIA wishes to

²⁰ See CDRH Comments at p.1.

²¹ See, for example, Comments of Arizona Department of Public Safety, CTIA, Federal Communications Consulting Engineers, McCaw and Southwestern Bell Mobile Systems who suggest that the compliance burden should be the responsibility of manufacturers.

emphasize that manufacturers are generally not in the position to resolve all of the various compliance issues that may arise related to the installation and use of radio devices which produce nonionizing radiofrequency energy. Within TIA, the members agree that each manufacturer should accomplish the necessary radiofrequency energy exposure testing and/or analysis to determine the compliance of its product(s) relative to the promulgated standard. In concert with compliance certification of future products,²² the TIA members support the provision of appropriate instructional information on the proper installation and use of their products. This can be of significant benefit to Commission licensees. However, the sphere of control of manufacturers cannot readily extend beyond the aforementioned provisions. Manufacturers have no "enforcement" authority extending beyond that enjoyed by product ownership up to the point of sale.

A very basic economic principle is that the primary function of manufacturers is to produce a product "For Sale". Only through these sales can manufacturers collect money from which to pay workers and buy more materials to produce more products. Inescapably linked to the sale of product is the transfer of ownership from producer (manufacturer) to licensee/user of the product. TIA submits that the sales driven transfer of product ownership carries with it an inherent transfer of responsibility for proper installation and use of the products in regard to compliance with electromagnetic energy rules as promulgated by the FCC.²³

²² In the TIA Comments filed in this proceeding, it states that compliance should be certified through the type acceptance process. TIA believes that two years after the process is developed for measuring SAR, the Commission's requirements should be invoked. Furthermore, all existing products should be grandfathered indefinitely.

²³ TIA notes that the FCC has already established a precedence for the transfer of FCC compliance responsibility to the licensee via the provisions of Part 17 of the FCC rules. This Part indicates that the responsibility for painting and lighting of a communications tower is that of the licensee. While the manufacturers of lights, wiring, paint, concrete and steel have certain product responsibility, the FCC has in no uncertain terms placed the final marking/lighting safety compliance responsibility with the licensee/owner of the equipment, and not with the manufacturer.

TIA agrees that the once the SAR testing standards are established by the TIA, EEPA or any other qualified organization, the FCC might incorporate them into its equipment authorization process. However, this cannot in any way relieve the telecommunications industry licensees, users or site owners of their responsibility for proper application and use of the radiofrequency equipment.

Some parties commented that "manufacturers should bear the burden of ensuring that the phones meet all requirements under the ANSI/IEEE standard", and that the "manufacturing community...should ultimately be charged with the responsibility for showing that its equipment complies with the ANSI/IEEE standard."²⁴ TIA views this position as somewhat narrow. Furthermore, it is not consistent with the fact that numerous carriers as reflected in their Comments, are encountering many non-manufacturing related problems in erecting base station towers, as are some broadcasters. A number of these parties are already accepting and responding to some of the compliance responsibilities by appearing before town and city council meetings to confront the growing sensationalism versus scientific fact.²⁵

TIA wholeheartedly supports the view that irrational fears are indeed a realistic concern for the entire industry; clearly, the responsibility for compliance with the Commission's Rules also must be shared by the industry as a whole.

Several Commentors noted that radiofrequency testing procedures will be financially burdensome.²⁶ TIA concurs. We note, however, that CTIA indicated in its

²⁴ See Comments of McCaw Cellular Communications at ii and Southwestern Bell Mobile Systems at p.5.

²⁵ Joint Comments of CBS Inc., Capital Cities/ABC Inc., Greater Media, Inc., Tribune Broadcasting Company and Westinghouse Broadcasting Company, Inc. at pp. 43-44

²⁶ SouthWestern Bell Mobile noted in its Comments at page 7 that "[a]ny requirement regarding SAR laboratory testing may be unfair to the cellular industry. These types of tests will be more complex and expensive and the results would be less objective and subject to more debate than radiated power tests. This will certainly raise the cost of hand-held cellular phones due to the manufacturers passing along the extra costs of complicated and expensive test procedures." Also, see

Comments that testing SAR “should not be burdensome to manufacturers, since measuring a unit’s SAR is a parameter which manufacturers must measure as part of the unit’s design and development cycle, and is in essence simply another characteristic of the radio.”²⁷ TIA does not agree with CTIA on this matter.

Another example of a somewhat narrow perspective is reflected in the Comments of PageNet. It indicates that with regard to multiple-transmitter locations, the burden of verifying compliance with the new radiofrequency guidelines should fall on the site owner, not the individual licensees. Again, compliance verification responsibilities must be assumed by the equipment licensee, although the site owner must also be involved to best facilitate compliance with the Commission’s Rules. It clearly takes a combined effort of the entire industry to assure compliance. Merely stating compliance as a “manufacturer’s or site owner’s problem” is not beneficial and merely detracts from a solution to a complex issue.

PROCEDURAL ISSUES

The New Standard Should be Phased-in Over a Transitional Period

Many of the Commenters ²⁸ , including TIA, urge a phase-in of the new standard. TIA continues to believe that a minimum transitional period of two years is necessary. A key benefit of this approach is adequate access by all equipment manufacturers to test facilities that can evaluate compliance with the new standard, especially with regard to SAR measurement. This will ensure that even small and medium-size equipment manufacturers have nondiscriminatory access to test laboratories. Any

generally, Comments of National Public Radio.

²⁷ CTIA Comments at p.6.

²⁸ Ericsson; CBS et al.; NAB; NPR; Jules Cohen and Associates; and Arizona Department of Public Safety.

other approach would disadvantage them relative to those companies who are able to construct their own test facilities.

Existing Authorized Equipment Should be Grandfathered

As McCaw Cellular and others point out, equipment already authorized and in the field poses no documented risk to public health and safety. Accordingly, as Jules Cohen and Associates, E.F. Johnson, and Telocator recognize, there is no reason to require recertification or type acceptance of all equipment that has already received equipment authorizations.

Were the Commission to require reauthorization of all communications equipment currently in use, there would be no real benefit. Instead, the public and FCC licensees would face enormous costs and the disruption of communications systems that ensure public order, safety, and health. The Commission's Laboratory staff would face a staggering workload, and the introduction of new electronic products requiring equipment authorization would face crippling delays.

TIA also views as impractical Northern Telecom's suggestion that equipment manufacturers supply addenda to prior equipment authorization applications. Manufacturers often have no accurate way of knowing what products made in the past are still in service, so which past applications would warrant supplementing? Would the FCC Laboratory be able to meaningfully review such an avalanche of paperwork? TIA thinks not.

The appropriate approach is to require compliance with the new standard at license renewal time. TIA therefore reiterates its request for grandfathering equipment covered by outstanding grants of equipment authorization.